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August 2, 2011

Ex Parte

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees, Docket No. 10-153

Dear Ms. Dortch:

On August 2, 2011, Katharine R. Saunders, Donald Brittingham and I separately met with: (1) Mark Stone, Chief of Staff and Legal Advisor to Commissioner Michael Copps, and Todd Watson, Legal Intern to Commissioner Copps; (2) Amy Levine, Senior Counsel and Legal Advisor to Chairman Julius Genachowski; and (3) Angela Giancarlo, Chief of Staff and Senior Legal Advisor to Commissioner Robert McDowell, regarding the above-referenced proceeding. As noted in our Comments,[1] we reiterated our support of efforts to make additional spectrum in the 7 GHz and 13 GHz bands available for wireless backhaul, noting that such spectrum will help supplement other backhaul alternatives, thereby promoting the future deployment of advanced communications services. Fixed microwave services are a segment of a robust industry in which various types of providers – including cable companies, CLECs, fiber providers, and fixed wireless operators – compete to deliver high-capacity services. As competition for these services continues to increase, a corresponding demand for additional spectrum for broadband-related uses has also grown. We urged the Commission to authorize additional spectrum for Part 101 FS operations to help meet this growth.

However, we noted that FCC should not undermine its grant of additional spectrum by encouraging inefficient use of that resource. In particular, while we generally support expanded use of adaptive modulation in the lower frequency bands, we raised concerns about the significant risk that such a rule could be used by licensees to design point-to-point microwave systems based on a lower performance standard, which would undermine Commission objectives to promote greater spectral efficiency. To avoid such an unintended consequence, the FCC should not create a rule that would encourage licensees to design to a less efficient standard than the now generally accepted practice within the industry. Microwave systems are typically

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[1] Comments of Verizon and Verizon Wireless, *Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Microwave Licensees*, WT Docket No. 10-153 (Oct. 25, 2010).

engineered to meet a minimum reliability of 99.995% and often meet a more stringent 99.999% standard. Verizon recommends adoption of a time-based condition for adaptive modulation that would comport with this widely accepted practice. Such a rule would limit the use of non-compliant modulations such that the FCC's specified minimum payload capacity and loading requirements are met 99.999%, or at least 99.995%, of the time.[2] A rule that reduces this reliability requirement – such as FWCC's proposed 99.95% – would undermine the Commission's goal in this proceeding to maximize the opportunity for fixed services to share existing bands.

Comsearch, an expert in frequency coordination and interference management, agrees with this assessment. In its Comments, Comsearch recommended that additional requirements for path design with adaptive modulation be added to Section 101.141(a)(3) and proposed the following additional language to that rule:

> "Links that use equipment capable of adjusting modulation must be designed using generally accepted multipath fading and rain fading models to meet the specified capacity and loading requirements at least 99.999% of the time, except links that use Category A antennas may be designed to meet the requirements at least 99.995% of the time."[3]

In contrast to Comsearch's expert advice, some have advocated no adoption of a particular minimum availability as a prerequisite for use of adaptive modulation, or of a much more lax 99.95% in lieu of the 99.999% or 99.995% recommended by Verizon and Comsearch.[4] But the difference between 99.999% and 99.95% availability is the difference in time between a link being unavailable for five minutes a year versus one that is unavailable for nearly four and a half hours. A 99.95% design requirement is 50 times less stringent than a 99.999% requirement, which would result in a 17 dB reduction in the fade margin requirement for a non-space diversity path. This significant reduction in required fade margin would create improper incentives to use smaller and lower performance antennas, which would significantly decrease spectral efficiency and increase the deployment costs and interference to future microwave licensees. Thus, adoption of anything below the time-based condition at 99.999%, or at least 99.995%, would increase the potential for interference conflicts among wireless backhaul licensees, thereby reducing the number of licensees that can share spectrum for backhaul use.

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[2] *Id.* at pp. 9-10; *accord* Notice of Proposed Rulemaking and Notice of Inquiry, *Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Microwave Licensees*, WT Docket No. 10-153, ¶ 38 (Aug. 5, 2010) (collecting comments observing that "it is standard engineering practice to design microwave links to have 99.995% or higher link availability.").

[3] Comments of Comsearch, *Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Microwave Licensees*, WT Docket No. 10-153, at 19 (Oct. 25, 2010) ("Comsearch Comments").

[4] Letter from M. Lazarus and C. Goepp to M. Dortch, *Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Microwave Licensees*, WT Docket No. 10-153 (Apr. 29, 2011).

Additionally, permitting a minimal 99.95% availability at a compliant modulation would promote implementation of paths in higher bandwidth channels when "only minimal capacity is really needed." Increased use of these paths would improperly circumvent Section 101.141(a)(3)'s goal of requiring lower capacity systems to use narrower channels.[5]

Finally, we opposed the auxiliary station proposal in the NPRM, explaining that it would undermine the goal of promoting cost-efficient access to adequate backhaul by leading to increased interference, less usable spectrum for backhaul, and increased costs for those operating existing systems or building new primary links.

Sincerely,

cc: Mark Stone
Todd Watson
Amy Levine
Angela Giancarlo

[5] Comsearch Comments at 18-19.